Bang & Olufsen

CD
New Version
CDM 12

Beocenter 2300-2500
Master Panel AV9000
BeoSound Ouverture

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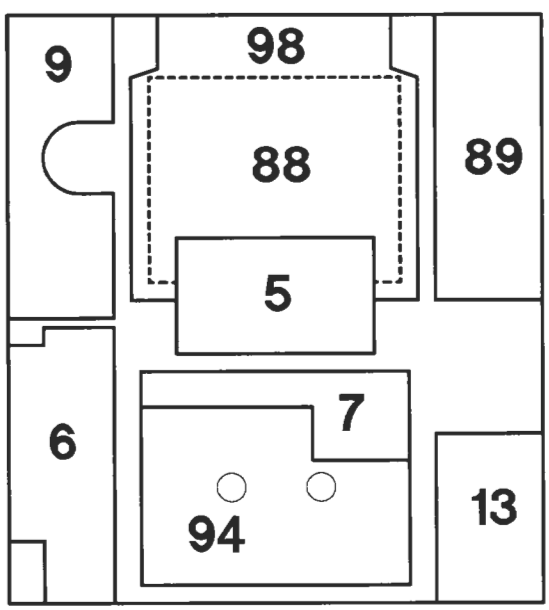

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BLOCK DIAGRAM
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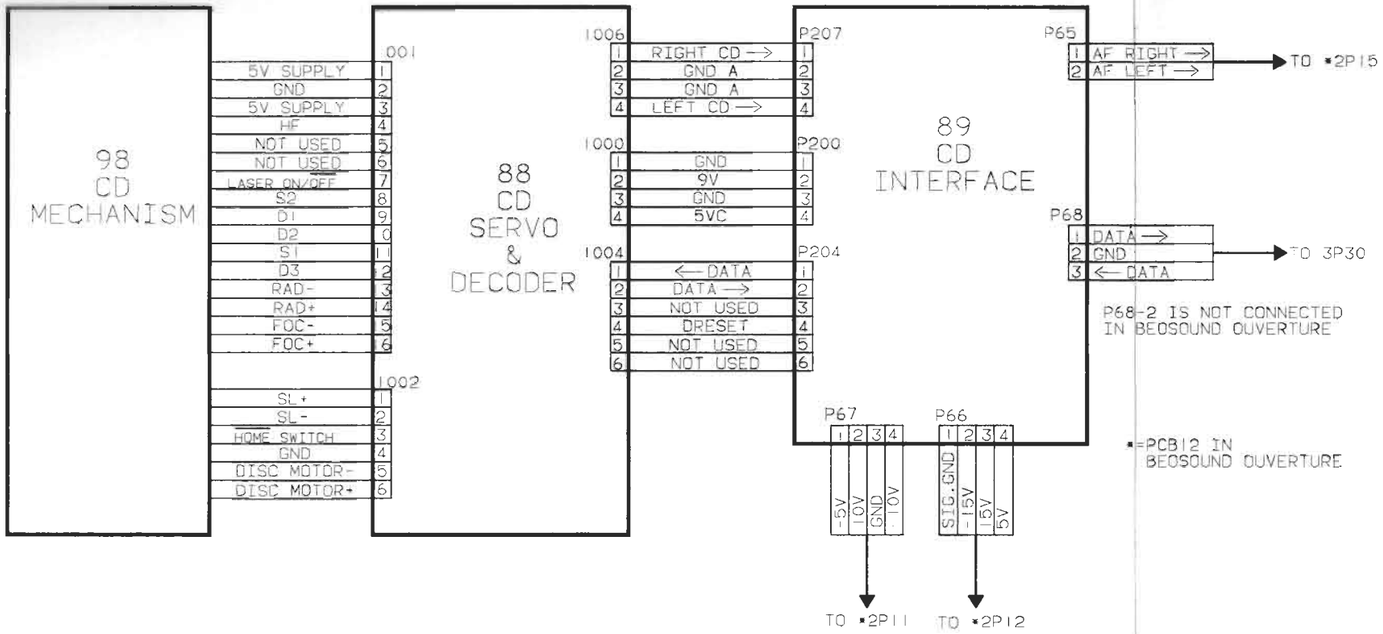
WIRING DIAGRAM



BLOCK DIAGRAM FOR CD

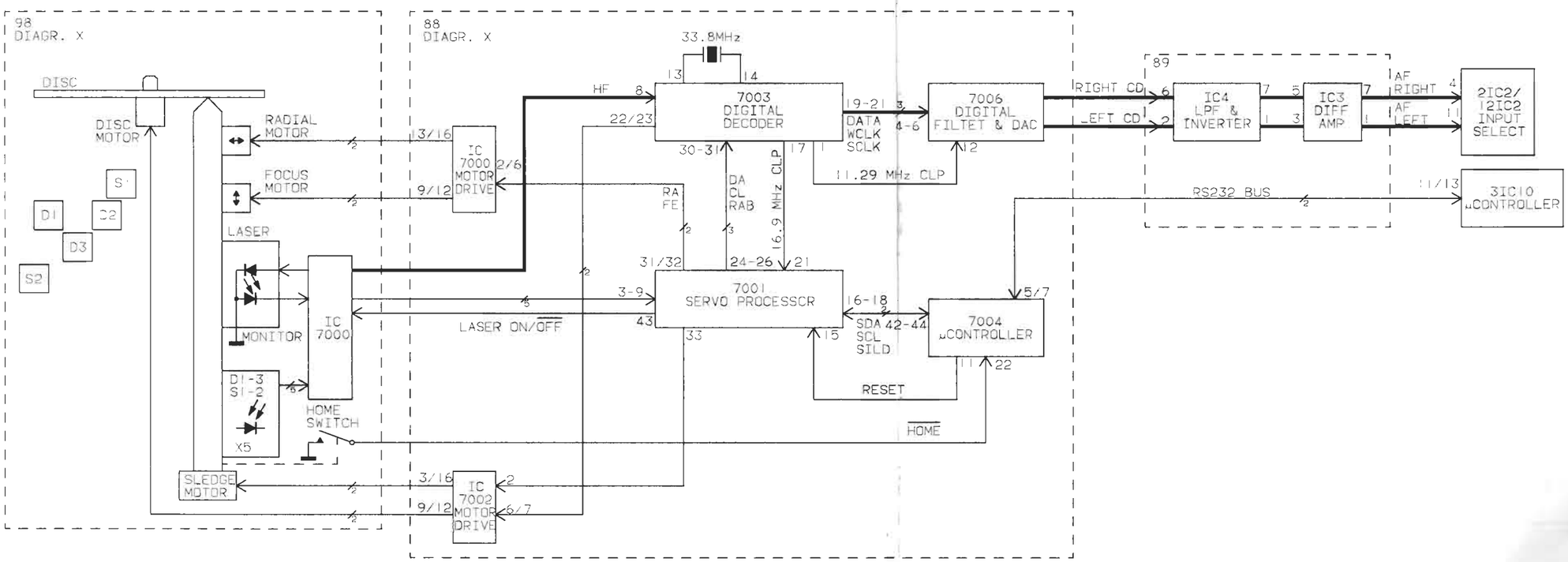
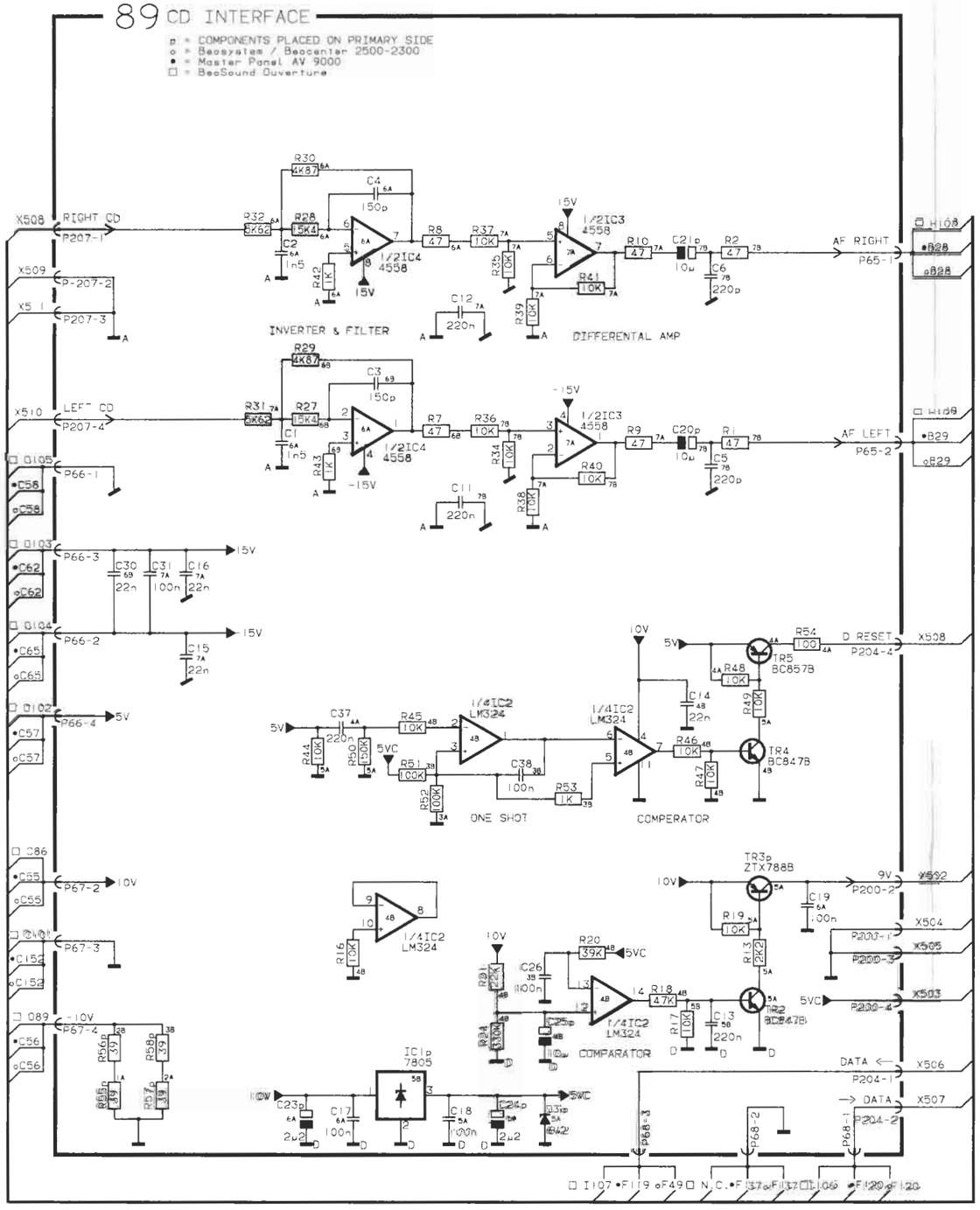
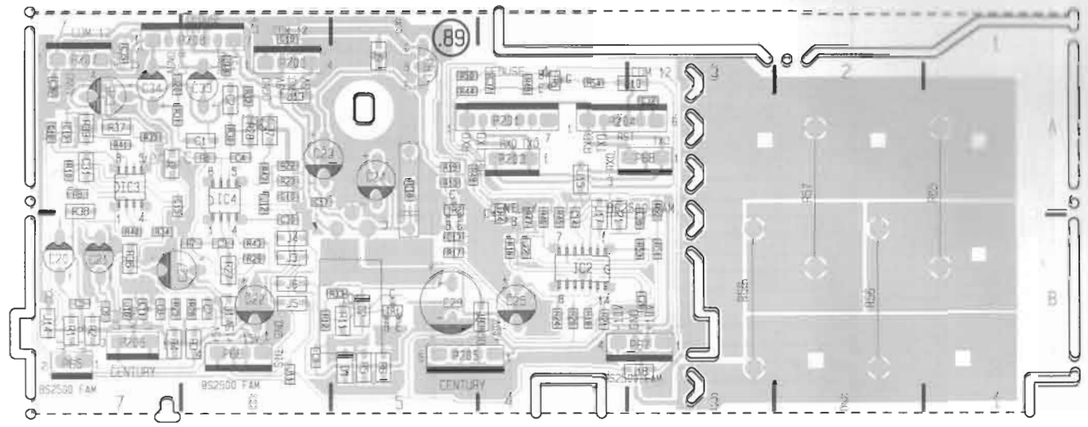


DIAGRAM I & J **CD INTERFACE (for BeoSystem/Beocenter 2500-2300 and Master Panel AV 9000)**
DIAGRAM E & F **CD INTERFACE (for BeoSound Ouverture)**



PCB 89, CD Interface



PCB 88, CD Servo & Decoder

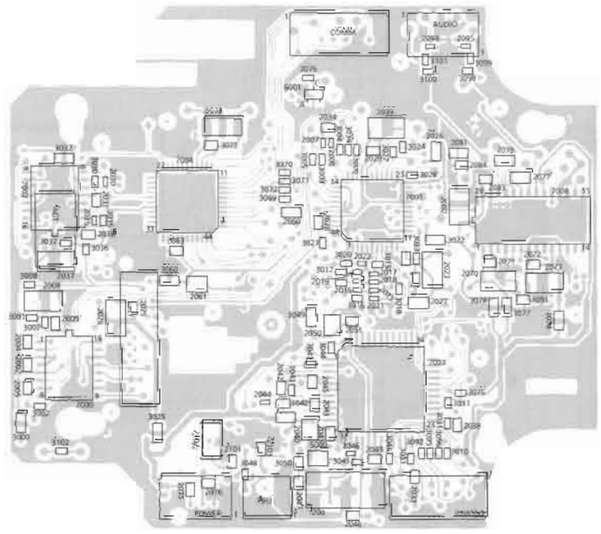


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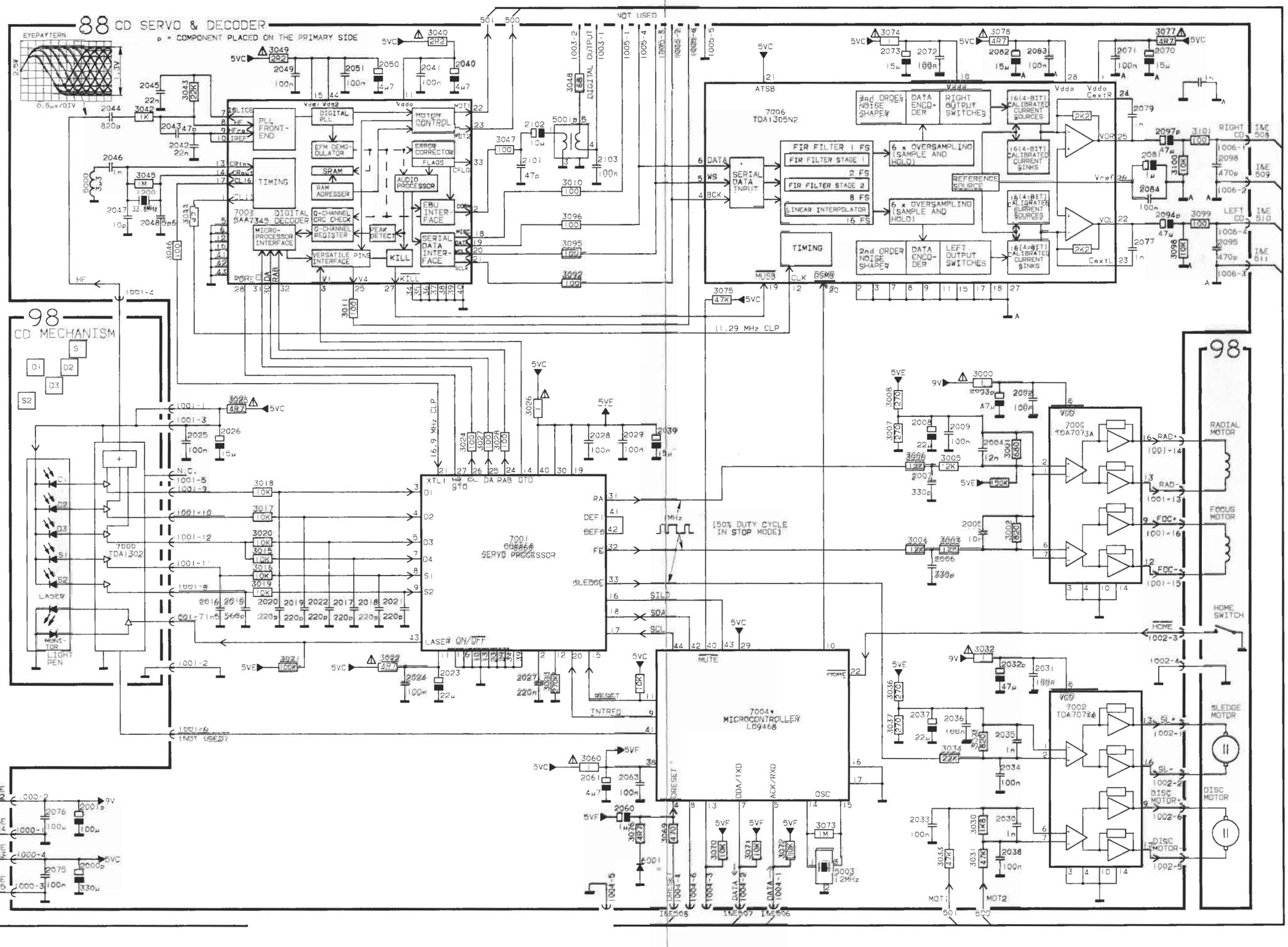
DIAGRAM X

DIAGRAM X **CD SERVO & DECODER** **(The connections I&E refers to the diagram on page 15-2)**



LIST OF ELECTRICAL PARTS

19	51	56	106	136	147	150	209
C B E	E B C	A C	IN ⊥ OUT	1	1	1	A C

Resistors not referred to are standard, see page 16-2
Δ indicates that static electricity may destroy the component.
** Specially selected or adapted sample.*

PCB 88, 8001868
CD Servo & Decoder

7000	8342495	**136**	TDA7073A	7003Δ	8342496	**147**	SAA7345
7001Δ	8342542	**147**	OQ8868	7004Δ*	8342670	**147**	LO9468
7002	8342495	**136**	TDA7073A	7006Δ	8342497	**136**	TDA1305

6001	8300979	**056**	BAS16

3000	5024000	1Ω	3040	5024001	2.2Ω
3001	5013235	680Ω 5% 1/16W	3043	5013253	22kΩ 5% 1/16W
3002	5013236	820Ω 1% 1/16W	3044	5013221	47Ω 5% 1/16W
3003-	5013250	12kΩ 1% 1/16W	3045	5013273	1MΩ 5% 1/16W
3008			3046-	5013225	100Ω 5% 1/16W
3010-	5013225	100Ω 5% 1/16W	3047		
3011			3048	5013223	68Ω 5% 1/16W
3015-	5013249	10kΩ 5% 1/16W	3049	5024001	2.2Ω
3020			3060	5024000	1Ω
3021	5013261	100kΩ 5% 1/16W	3069	5013233	470Ω 5% 1/16W
3022	5024004	4.7Ω	3070-	5013249	10kΩ 5% 1/16W
3023	5013266	270kΩ 5% 1/16W	3072		
3024	5013225	100Ω 5% 1/16W	3074	5024000	1Ω
3025	5024004	4.7Ω	3075	5013257	47kΩ 5% 1/16W
3026	5024000	1Ω	3076	5013209	4.7Ω 5% 1/16W
3027-	5013225	100Ω 5% 1/16W	3077-	5024004	4.7Ω
3028			3078		
3030	5013240	1.8kΩ 5% 1/16W	3092	5013225	100Ω 5% 1/16W
3031	5013257	47kΩ 5% 1/16W	3095-	5013225	100Ω 5% 1/16W
3032	5024000	1Ω	3096		
3033	5013257	47kΩ 5% 1/16W	3098	5013249	10kΩ 5% 1/16W
3034	5013253	22kΩ 5% 1/16W	3099	5013225	100Ω 5% 1/16W
3035	5013236	820Ω 1% 1/16W	3100	5013249	10kΩ 5% 1/16W
3036-	5013230	270Ω 1% 1/16W	3101	5013225	100Ω 5% 1/16W
3037			3102	5013249	10kΩ 5% 1/16W

2000	4201350	330µF 10V	2028-	4010274	100nF -20+80% 25V
2001	4201351	100µF 25V	2029		
2002	4010274	100nF -20+80% 25V	2030	4011110	1.0nF 10% 50V
2003	4201352	47µF 16V	2031	4010274	100nF -20+80% 25V
2004	4011123	12nF 10% 50V	2032	4201352	47µF 16V
2005	4010271	10nF 10% 50V	2033-	4010274	100nF -20+80% 25V
2006	4001141	330pF 5% 50V	2034		
2007	4001141	330pF 5% 50V	2035	4011110	1.0nF 10% 50V
2008	4201353	22µF 6.3V	2036	4010274	100nF -20+80% 25V
2009	4010274	100nF -20+80% 25V	2037	4201353	22µF 6.3V
2015	4001144	560pF 5% 50V	2038	4010274	100nF -20+80% 25V
2016	4011112	1.5nF 10% 50V	2039	4201354	15µF 10V
2017-	4001139	220pF 5% 50V	2040	4201355	4.7µF 10V
2022			2041	4010274	100nF -20+80% 25V
2023	4201353	22µF 6.3V	2042	4010272	22nF -20+80% 50V
2024-	4010274	100n -20+80% 25V	2043	4000408	47pF 5% 50V
2025			2044	4001146	820pF 5% 50V
2026	4201354	15µF 10V	2045	4010272	22nF -20+80% 50V
2027	4010314	220nF -20+80% 25V	2046	4011110	1.0nF 10% 50V
			2047	4000400	10pF 5% 50V

PCB 89, 8001814
CD Interface

2048	4001120	5.6pF 5% 50V	2077	4000424	1nF 5% 50V
2049	4010274	100nF -20+80% 25V	2079	4000424	1nF 5% 50V
2050	4201355	4.7µF 10V	2081	4201356	1µF 16V
2051	4010274	100nF -20+80% 25V	2082	4201354	15µF 10V
2060	4201356	1µF 16V	2083-	4010274	100nF -20+80% 25V
2061	4201355	4.7µF 10V	2084		
2063	4010274	100nF -20+80% 25V	2094	4201352	47µF 16V
2070	4201354	15µF 10V	2095	4001143	470pF 5% 50V
2071-	4010274	100nF -20+80% 25V	2097	4201352	47µF 16V
2072			2098	4001143	470pF 5% 50V
2073	4201354	15µF 10V	2101	4000408	47pF 5% 50V
2075-	4010274	100nF -20+80% 25V	2102	4201357	10µF 16V
2076			2103	4010274	100nF -20+80% 25V

1200	8090157	Crystal 33.868MHz

5000	8020822	Coil 3.3µH	5003	8030246	Coil 12MHz

1000	7221131	Plug 4 pole	1004-	7221157	Plug 6 pole
1001	7210895	Socket 16 pole	1005		
1002	7210890	Socket 6 pole	1006	7221131	Plug 4 pole
1003	7221082	Plug 2 pole			

IC1	8340796	**106**	7805	IC3-	8341022	**150**	4558
IC2	8341041	**150**	LM324 SO-14	IC4			

TR2	8320755	**051**	BC847B	TR4	8320755	**051**	BC847B
TR3	8321050	**019**	ZTX788B	TR5	8320811	**051**	BC857B

D003	8300201	**209**	Z6.2V 5%

R027-	5011986	15.4kΩ 1% 1/8W	R34-	5012331	10kΩ 1% 1/10W
R028			R35		
R29-	5012290	4.87kΩ 1% 1/10W	R36-	5011557	10kΩ 1% 1/8W
R30			R39		
R31-	5012297	5.62kΩ 1% 1/10W	R40-	5012331	10kΩ 1% 1/10W
R32			R41		

C1-	4000351	1.5nF 5% 50V	C20-	4201173	10µF 20% 50V
C2			C21		
C3-	4000414	150pF 5% 50V	C23-	4201174	2.2µF 20% 50V
C4			C24		
C5-	4000416	220pF 5% 50V	C25	4200524	10µF 20% 25V
C6			C26	4010274	100nF -20+80% 25V
C11-	4010314	220nF -20+80% 25V	C30	4010272	22nF -20+80% 50V
C13			C31	4010166	100nF -20+80% 50V
C14-	4010272	22nF -20+80% 50V	C37-	4010314	220nF -20+80% 25V
C16			C38		
C17-	4010274	100nF -20+80% 25V			
C19					

P65	7220709	Plug 2 pole	P200	7220711	Plug 4 pole
P66-	7220711	Plug 4 pole	P204	7220713	Plug 6 pole
P67			P207	7220711	Plug 4 pole
P68	7220710	Plug 3 pole			

For other electrical parts see section 3.

Standard resistors
Resistors 5% 1/2W

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0		5011000	5011013	5011028	5011044	5010313	5011069	5011083
1.2	5011406	5011001	5011014	5011030	5011045	5011058	5010421	
1.5	5010727	5011002	5011015	5011031	5011046	5011059	5011071	
1.8	5010857	5010787	5011016	5011033	5011047		5011072	
2.2	5011335	5010708	5010815	5011034	5011048	5011061	5011074	
2.7	5011612	5010803	5011018	5010055	5011049	5011062	5011075	
3.3	5010255	5011007	5011019	5011037		5011063	5010381	
3.9		5010782	5011021	5010700	5011051		5010392	
4.7	5010765	5011009	5011022	5010035	5010036	5011065	5011078	
5.6		5011010	5011023	5011041		5011066	5011079	
6.8	5010874	5011011	5011024	5011042	5010810	5011067	5011080	
8.2		5011012	5011026	5011043	5010038	5011068	5011081	

Resistors 5% 1/4W

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0	5010592	5010506	5010065	5010040	5010059	5010049	5010054	5010638
1.2		5010595	5010128	5010153	5010046	5010047	5010665	
1.5	5011348	5010468	5010057	5010247	5010053	5010063	5010093	
1.8		5010822	5010362	5010066	5010135	5010072	5010791	
2.2	5010682	5010448	5010092	5010064	5010079	5010120	5010245	
2.7	5010925	5010403	5010000	5010298	5010141	5010083	5010431	
3.3	5011860	5010253	5010044	5010076	5010075	5010117	5010848	
3.9	5011377	5010622	5010070	5010069	5010060	5010073	5010714	
4.7	5010888	5010411	5010058	5010048	5010045	5010077	5011513	
5.6	5010706	5010151	5010067	5010041	5010061	5010071	5010658	
6.8	5010904	5010039	5010144	5010052	5010062	5010074		
8.2	5010880	5010056	5010068	5010154	5010091	5010505		

Resistors 5% 1/8W

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0		5011464	5011357	5010816	5010935	5011440	5011459	5020875
1.2		5011351	5011084	5011442	5011338	5011341	5011175	
1.5		5011463	5011443	5011178	5011364	5011398	5011460	
1.8			5011350	5011361	5011344	5011468		
2.2	5011032	5011376	5010886	5011353	5010833	5011369	5011342	
2.7		5011471	5011355	5011362	5011366	5011370	5011478	
3.3		5011347	5011337	5010827	5011346	5011371	5011462	
3.9		5011438	5011817	5011157	5011457	5011372	5020876	
4.7	5011363	5011038	5011441	5011363	5010937	5011343	5011611	
5.6		5011412	5011358	5010885	5011166	5011340		
6.8		5011356	5011336	5010839	5011367	5011458		
8.2		5011466	5011354	5011339	5011368	5011373		

Resistors SMD 2% 1/8W
SMD 5% 1/8W

Glue dots, approx. 200, part no. 3181932

	5% x1	2% x10	2% x100	2% x1k	2% x10k	2% x100k	5% x1M	2% x10M
1.0	5011623	5011647	5011218	5011227	5011241	5011256	5011267	5011730
1.1	5011624	5011648	5011669	5011681	5011689	5011694	5011707	
1.2	5011625	5011649	5011219	5011682	5011490	5011257	5011708	
1.3	5011626	5011650	5011670	5011683	5011242	5011258	5011709	
1.5	5011627	5011651	5011220	5011228	5011243	5011259	5011710	
1.6	5011628	5011652	5011671	5011684	5011690	5011695	5011711	
1.8	5011629	5011653	5011672	5011229	5011244	5011260	5011712	
2.0	5011630	5011654	5011673	5011685	5011691	5011696	5011713	
2.2	5011216	5011655	5011674	5011230	5011245	5011261	5011714	
2.4	5011634	5011656	5011675	5011686	5011246	5011697	5011715	
2.7	5011635	5011657	5011497	5011231	5011247	5011262	5011716	
3.0	5011731	5011658	5011499	5011500	5011692	5011698	5011717	
3.3	5011217	5011659	5011676	5011232	5011248	5011263	5011718	
3.6	5011636	5011660	5011677	5011687	5011249	5011264	5011719	
3.9	5011637	5011661	5011221	5011233	5011491	5011699	5011720	
4.3	5011638	5011662	5011498	5011688	5011492	5011700	5011721	
4.7	5011639	5011269	5011222	5011234	5011250	5011265	5011722	
5.1	5011640	5011663	5011678	5011235	5011493	5011701	5011723	
5.6	5011641	5011664	5011223	5011236	5011251	5011702	5011724	
6.2	5011642	5011665	5011224	5011237	5011693	5011703	5011725	
6.8	5011643	5011666	5011225	5011238	5011252	5011704	5011726	
7.5	5011644	5011667	5011679	5011239	5011253	5011705	5011727	
8.2	5011645	5011270	5011226	5011240	5011254	5011266	5011728	
9.1	5011646	5011668	5011680	5011489	5011255	5011706	5011729	

Resistors SMD 5% 1/10W

Glue dots, approx. 200, part no. 3181932

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
0.0	6000072							
1.0		5011920	5011932	5011944	5011956	5011968	5011980	5012275
1.2	5012326	5011921	5011933	5011945	5011957	5011969	5012267	
1.5	5012235	5011922	5011934	5011946	5011958	5011970	5012268	
1.8		5011923	5011935	5011947	5011959	5011971	5011989	
2.2		5011924	5011936	5011948	5011960	5011972	5012220	
2.7		5011925	5011937	5011949	5011961	5011973	5012269	
3.3		5011926	5011938	5011950	5011962	5011974	5012261	
3.9		5011927	5011939	5011951	5011963	5011975	5012270	
4.7		5011928	5011940	5011952	5011964	5011976	5012271	
5.6		5011929	5011941	5011953	5011965	5011977	5012272	
6.8		5011930	5011942	5011954	5011966	5011978	5012273	
8.2		5011931	5011943	5011955	5011967	5011979	5012274	

LIST OF MECHANICAL PARTS

Front

See drawing page 4-1

	Beocenter 2500	Beocenter 2300	Master Panel AV9000	BeoSound Ouverture	
0506	3151357			3151357	Holder
9028			3162461		Cover
9032	3162461	3162461		3162461	Cover
9033			3112418		Chassis
			2515001		Wire holder
			2038118		Screw, 3x6
9037	3112418	3112418		3112418	Chassis
	2515001	2515001		2515001	Wire holder
	2038118	2038118		2038118	Screw, 3x6
98	8420201	8420201	8420201	8420201	CD mechanism
1	2038133	2038133	2038133	2038133	Screw, 3x11

Screws etc.

Survey of wire bundles

6277019	6277019	6277019	6277019	Wire bundle for CD Servo & Decoder and CD Interface 88P1006 - 89P207 88P1000 - 89P200 88P1004 - 89P204
6276990	6276991	6276992	6276994	Main wire bundle
2P11 - 89P67	2P11 - 89P67	2P11 - 89P67	3P26 - 5P42	
2P16 - 7P56	2P15 - 89P65	2P16 - 7P56	3P27 - 9P77	
2P15 - 89P65	2P12 - 89P66	2P15 - 89P65	3P32 - 6P46	
2P12 - 89P66	2P17 - 5P41	2P12 - 89P66	3P30 - 89P68	
2P17 - 5P41	2P18 - 6P49	2P17 - 5P41	3P29 - 7P54	
2P19 - 7P53	2P25 - HTLFP26	2P19 - 7P53	9P80 - 5P46	
2P18 - 6P49	2P24 - MotP76	2P18 - 6P49	9P76 - 6P133	
2P25 - HTLFP26	3P36 - 5P41	2P22 - 7P55	12P11 - 89P67	
2P22 - 7P55	3P32 - 6P46	2P24 - 9P76	12P12 - 89P66	
2P24 - MotP76	3P30 - 89P68	3P36 - 5P41	12P15 - 89P65	
3P36 - 5P41	3P27 - MotP77	3P29 - 7P54	12P16 - 7P56	
3P29 - 7P54	IRLP48 - 6P82	3P32 - 6P46	12P17 - 5P41	
3P32 - 6P46	MotP80 - 5P46	3P30 - 89P68	12P18 - 6P49	
3P30 - 89P68		3P27 - 9P77	12P19 - 7P53	
3P27 - MotP77		6P48 - 6P82	12P22 - 7P55	
IRLP48 - 6P82		5P46 - 9P80	12P25 - 18P26	
MotP80 - 5P46			12P108 - 13P130	
			15P24 - 6P132	

ELECTRICAL MODIFICATIONS IN RELAITION TO OLD VERSION

Beocenter/ Beosystem 2300-2500	Master Panel AV9000	BeoSound Ouverture	
PCB8	PCB8	PCB8	Replaced by PCB88 CD Servo & Decoder and PCB89 CD interface.
PCB20 Disc Detector	PCB20 Disc Detector		Removed.
2R3, 2C4, 2D2 & 2TR5	2R3, 2R200, 2C4, 2D2 & 2TR5	12R113, 12R23, 12C61, 12D7 & 12TR2	Removed.

SERVICE TIPS

Starting up

When starting up the CD section, 5VC for the CD servo & decoder, PCB 88, has to switch on approx. 200 ms before 9V. This is important because the microcomputer system at PCB 88 has to be reset before voltage is applied to the motor control circuits.

CD starting procedure

When starting up, the first step in the procedure is to search for focus, then the disc motor starts, the radial loop is locked, and the search for the "lead in" is started.

Disc motor does not start

If focus is searched and the laser switches on, and yet the disc motor does not rotate, the error is probably in the transport mechanism itself. For further service tips, see section 5 (section 7 as regards Beocenter/ Beosystem 2500-2300).

SERVICE-TIPS

Anfahren

Beim Anfahren des CD-Teils muß 5VC für den CD Servo & Decoder, PCB 88, um ca. 200 ms vor 9V einschalten. Dies ist wichtig, damit das Mikrocomputersystem auf PCB 88 zurückgesetzt wird, ehe Spannung auf die Motorsteuerschaltkreise gelangt.

CD-Anfahrvorgang

Beim Anfahren erfolgt zuerst ein Fokussuchvorgang, der Disc-Motor läuft an, die Radial-Servo-Schleife rastet ein, und es wird nach "lead in" gesucht.

Disc-Motor läuft nicht an

Wird nach Fokus gesucht und zündet gleichzeitig der Laser, der Motor rotiert aber nicht, so ist der Fehler warscheinlich im Laufwerk selbst zu suchen. Siehe hierzu im übrigen Service-Tips Abschnitt 5 (Abschnitt 7 für Beocenter/Beosystem 2500-2300).

CONSEILS DE MAINTENANCE

Mise en route

Lors de la mise en route du bloc CD, la ligne 5VC alimentant la carte PCB 88 "CD Servo & Decoder" doit s´amorcer quelque 200 ms avant la ligne 9V. Ce décalage est important car il permet la réinitialisation des microcalculateurs de la carte PCB 88 avant la mise sous tension des circuits de commande du moteur.

Procédure de mise en route du CD

Lors de la mise en route, la recherche porte d´abord sur le point de concentration. Puis le moteur de rotation du disque démarre, la boucle radiale se verrouille et le sillon de départ fait l´objet d´une recherche.

Moteur de rotation du disque : refus de démarrer

L´anomalie se trouve vraisemblablememt dans le mécanisme d´entraînement à proprement parler si le moteur de rotation du disque refuse de tourner après avoir recherché le point de concentration et excité le laser. Se reporter également aux conseils de maintenance du paragraphe 5 (paragraphe 7 pour les Beocenter/Beosystem 2500-2300).